

**WHAT IS CLAIMED IS:**

- 1 1. A container, comprising:  
2 a container body including a cooling core body having a super-coolable  
3 composition disposed within a core cavity of the cooling core body,  
4 wherein the core body defines a container cavity for having articles  
5 disposed therein; and  
6 an insulated container cover mountable on the container body and capable  
7 of covering the container cavity.
- 1 2. The container of claim 1 wherein:  
2 the cooling core body includes a first cooling core shell and a second  
3 cooling core shell attached to the first cooling core shell; and  
4 the core cavity is defined between the a first cooling core shell and the  
5 second cooling core shell.
- 1 3. The container of claim 2, further comprising:  
2 a cooling member disposed within the core cavity and essentially  
3 encapsulated within the super-coolable composition.
- 1 4. The container of claim 1, further comprising:  
2 a cooling member disposed within the core cavity and essentially  
3 encapsulated within the super-coolable composition.
- 1 5. The container of claim 4 wherein the cooling member includes a plurality of  
2 cooling member segments.
- 1 6. The container of claim 4 wherein the cooling member is a multi-pass cooling  
2 member.

- 1 7. The container of claim 4 wherein the cooling member includes a first cooling  
2 member coupling and a second cooling member coupling.
- 1 8. The container of claim 1, further comprising:  
2 an insulating shell having the cooling core body disposed therein.
- 1 9. The container of claim 1, further comprising:  
2 an insulating insert disposed within the cooling core body.
- 1 10. The container of claim 9 wherein:  
2 the cooling core body includes a first cooling core shell and a second  
3 cooling core shell attached to the first cooling core shell; and  
4 the core cavity is defined between the first cooling core shell and the  
5 insulating shell.
- 1 11. The container of claim 10, further comprising:  
2 a cooling member disposed within the core cavity and essentially  
3 encapsulated within the super-coolable composition.
- 1 12. The container of claim 1, wherein the super-coolable composition is made by  
2 a process comprising:  
3 forming a first mixture including water and ethanol, wherein the first  
4 mixture has a first pH level;  
5 adjusting the pH level of the first mixture to have a second pH level  
6 different than the first pH level; and  
7 combining a water-soluble binding agent with the first mixture to form a  
8 second mixture.

- 1    13. A cooling core assembly, comprising:  
2        a cooling core body having a core cavity therein;  
3        a cooling member disposed in the core cavity; and  
4        a super-coolable composition disposed within the core cavity, the super-  
5        coolable composition encapsulating at least a portion of the cooling  
6        member.
- 1    14. The cooling core assembly of claim 13 wherein:  
2        the cooling core body includes a first cooling core shell and a second  
3        cooling core shell attached to the first cooling core shell; and  
4        the core cavity is defined between the a first cooling core shell and the  
5        second cooling core shell.
- 1    15. The cooling core assembly of claim 13 wherein the cooling member includes a  
2        plurality of cooling member segments.
- 1    16. The cooling core assembly of claim 15 wherein the cooling member is a multi-  
2        pass cooling member.
- 1    17. The cooling core assembly of claim 13 wherein the cooling member includes a  
2        first cooling member coupling and a second cooling member coupling.
- 1    18. The cooling core assembly of claim 13, further comprising:  
2        an insulating shell substantially encompassing an exterior surface of the  
3        cooling core body.
- 1    19. The cooling core assembly of claim 13, further comprising:

2 an insulating insert substantially encompassing an interior surface of the  
3 cooling core body.

1 20. The cooling core assembly of claim 13, wherein the super-coolable  
2 composition is made by a process comprising:  
3 forming a first mixture including water and ethanol, wherein the first  
4 mixture has a first pH level;  
5 adjusting the pH level of the first mixture to have a second pH level  
6 different than the first pH level; and  
7 combining a water-soluble binding agent with the first mixture to form a  
8 second mixture.

- 1 21. A process for super-cooling a super-coolable composition of an article, the  
2 process comprising:  
3 attaching a cooling member of an article to a cooling unit of a cooling  
4 apparatus capable of super-cooling a cooling fluid, where in the  
5 cooling member is encapsulated within a super-coolable composition  
6 in a cooling core body of the article;  
7 facilitating super-cooling of a cooling fluid within a tank of the cooling  
8 unit; and  
9 circulating the cooling fluid through the cooling member after the cooling  
10 fluid achieves a prescribed super-cooled state.
- 1 22. The process of claim 21 wherein facilitating super-cooling of a cooling fluid  
2 includes cooling the cooling fluid to a temperature of between about -20  
3 degrees centigrade and -30 degrees centigrade.
- 1 23. The process of claim 21 wherein facilitating super-cooling of a cooling fluid  
2 includes:  
3 circulating the cooling fluid through a circulator immersed in the cooling  
4 fluid; and  
5 passing the cooling fluid through a heat exchanging coil.
- 1 24. The process of claim 21 wherein attaching the cooling member of the article to  
2 the cooling apparatus includes attaching the cooling member to a pump of a  
3 cooling unit.
- 1 25. The process of claim 24 wherein circulating the cooling fluid through the  
2 cooling member after the cooling fluid achieves a prescribed super-cooled  
3 state includes pumping the cooling fluid, via the pump, from the tank through  
4 the cooling member and back to the tank.

- 1    26. The process of claim 24, further comprising:  
2        adjusting the velocity at which the cooling fluid is circulated through the  
3        cooling member to maintain a desired cooling fluid flow condition.